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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,010	12/03/2003	T. Scott Pinkerton	P05574US01	5502

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801 GRAND AVENUE
SUITE 3200
DES MOINES, IA 50309-2721

EXAMINER	
KRUSE, DAVID H	

ART UNIT	PAPER NUMBER
1638	

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,010	PINKERTON ET AL.	
	Examiner	Art Unit	
	David H Kruse	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/03/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/14/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 14 May 2004 has been considered, a signed copy is attached hereto.

Specification

2. The claim of priority to a provisional application on page 1 of the specification is objected to because the phrase "claims priority to" should read -- claims benefit of -- under 35 U.S.C. § 119(e). Applicant is required to correct this matter of form.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 5, 7, 8, 11, 13, 14, 17, 19, 20, 23, 33, 34, 36 and 38 are rejected under 35 U.S.C. § 102(b) as being anticipated by Phillips *et al* (Proc. Natl. Acad. Sci. USA 1990, 87:8155-8159).

Phillips *et al* disclose transforming a *Drosophila melanogaster* cell with a polynucleotide encoding the *Pseudomonas diminuta* organophosphate hydrolase and selecting transformed cells using the organophosphate paraoxon (see page 8155, right column to page 8156, left column). Phillips *et al* disclose introducing a first and a second polynucleotide, said first polynucleotide encoding a heat shock protein and said second polynucleotide encoding organophosphate hydrolase. Phillips *et al* disclose

analyzing for the presence of hydrolysis by spectrophotometry. Hence, Phillips et al have previously disclosed all of the claim limitations.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-40 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Barrett (U.S. Patent 6,380,465, filed 11 July 1999) in view of Jilka (WO 99/53037, published 21 October 1999) and Hood *et al* (WO 01/96543 A2, published 20 December 2001).

Barrett teaches transforming plant cells with a polynucleotide encoding P450 enzymes that metabolize organophosphates and a method of determining the ability of the polynucleotide to protect a plant from deleterious effects of a pesticide comprising contacting said plant with a pesticide (see column 6, lines 9-40, and claim 14). Barrett teaches that the preferred plant is maize (see column 5, line 66). Barrett teaches that detection of metabolites can be performed by fluorescent labeling (column 6, line 27).

Barrett does not teach transforming a plant cell with a polynucleotide encoding an organophosphate hydrolase, comprising a first and a second polynucleotide, or a polynucleotide encoding SEQ ID NO: 1.

Jilka teaches a plant cell transformed with a polynucleotide encoding an organophosphate hydrolase (claim 19). Jilka teaches that said plant cell can be corn

(page 18, line 13), that said polynucleotide can comprise an additional coding sequence (page 13, 3rd paragraph), that one of ordinary skill in the art at the time of Applicant's invention would have been motivated to optimize a polynucleotide encoding an organophosphate hydrolase for expression in corn (page 7, lines 7-8), and that other host organisms such as bacteria and yeast can be transformed (page 3, last paragraph).

Hood *et al* teach a polynucleotide comprising SEQ ID NO: 1 in Figures 19 (not labeled) and 20. Hodd *et al* teach a maize plant cell transformed with said polynucleotide (page 33, lines 24-29). Hood *et al* teach detecting a hydrolysis product using spectrophotometric methods (page 34, lines 19-24). Hood *et al* teach using the organophosphate paraoxon to detect activity (page 34, lines 19-24).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Barrett to transform a corn plant cell with a polynucleotide encoding an organophosphate and select transformed cell in the presence of an organophosphate that inhibits growth of a corn cell using the teachings of Jilka and Hood *et al*. The organophosphate compounds bensulide, a lipid synthesis inhibitor, and amiprophos-methyl, an anti-microtubule agent, of the claimed methods would have been obvious to one of ordinary skill in the art at the time of Applicant's invention as well known plant cell growth inhibitors that can be degraded by an organophosphate hydrolases. The methods of detecting hydrolysis at Applicant's claims 38-40 would have been obvious depending upon what organophosphate is used, the methods of claims 38 and 39 are explicitly taught in the prior art. Given the success

of Jilka in expressing a polynucleotide optimized for maize, encoding a bacterial organophosphate hydrolase, in a maize plant cell, one of ordinary skill in the art at the time of Applicant's invention would have had a reasonable expectation of success. It was widely recognized by those of ordinary skill in the art at the time of the invention that polynucleotides encoding herbicide-detoxifying enzymes could be used to select for transformed plant cells as evidenced by the teachings of Jilka that additional selection marker genes that confer on a plant cell resistance to a chemical agent can be used (page 13, 3rd paragraph).

Conclusion

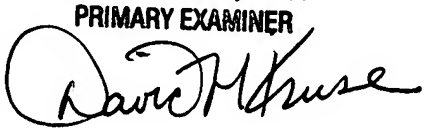
7. No claims are allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (571) 272-0804. The fax telephone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-0547.

DAVID H. KRUSE, PH.D.
PRIMARY EXAMINER



David H. Kruse, Ph.D.
3 March 2005

9. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

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